Permit Guidance 10 Final	Mercury Variance Guidance	
	Statutory references: ORC 6111.03 ORC 6111.041 Rule references: OAC 3745-1-01(F) OAC 3745-33-07(D)	Ohio EPA, Division of Surface Water Revision 1, _____, 2000
This internal guidance does not affect the requirements found in the referenced rules or statute.		

BACKGROUND

On June 22, 1999, USEPA approved a new analytical method (EPA method 1631) for measuring very low concentrations of mercury. In the NPDES permitting program, this will allow regulatory agencies to judge a permittee's compliance with stringent mercury limits that are based on water quality criteria. Method 1631 is approximately 200 times more sensitive than the previous approved method (EPA method 245.1or 245.2). The Method Detection Level (MDL) for this new method is 0.2 ng/l whereas the detection level based on the previous method was 0.2 ug/l. The new quantification level[1] is 0.5 ng/l (Lake Erie drainage basin) or 1.0 ng/l (Ohio River drainage basin), while the previous quantification level was 1,000 ng/l (statewide). NPDES permits issued prior to June 22, 1999 contained a requirement to use the previous approved method, and compliance was judged by that method's practical quantification level[2] (PQL). Since the water quality-based limits were so far below the PQL, true compliance with the limits could not be judged.

Implementation of the **general mercury variance** is intended to prevent substantial and widespread social and economic impacts. The average cost to remove mercury below 12 ng/l through end-of-pipe treatment is in excess of ten million dollars per pound of mercury removed. Studies performed by Foster Wheeler Environmental Corporation, DRI / McGraw Hill, and the Ohio EPA[3] support that fact. The general mercury variance has been included in Ohio's rules to offer NPDES permittees an opportunity for relief from installing costly end-of-pipe treatment in order to comply with very low average water quality-based mercury limits.

TYPES OF VARIANCES

Provisions for variances from a Water Quality Standard (WQS) can be found in paragraph (D)

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[1] "Quantification Level" is the minimum concentration at which we can be confident that the numerical analysis result is accurate. It is measured in the Lake Erie drainage basin by the minimum level (0.5 ng/l) and in the Ohio River drainage basin by the practical quantification level (1.0 ng/l).

[2] "Practical Quantification Level" is five times the MDL for the most sensitive method; it represents the uncertainty factor to cover the area where we are certain of the detection of a pollutant, but are uncertain about the accuracy of the quantification.

[3] "Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy," April 24, 1997, and "Economic Impacts of the Proposed Ohio EPA Water Quality Rules on the Ohio Economy," July 1997.

of rule 3745-33-07 of the Ohio Administrative Code (OAC). The variance that applies specifically to mercury can be found in paragraph (D)(10) of OAC rule 3745-33-07.

Individual Variance {OAC 3745-33-07(D)(1)-(8)}

A variance from a water quality standard provides an NPDES permittee with a period of relief when the permittee cannot immediately comply with a water quality-based effluent limit (WQBEL). To receive an individual variance, a permittee must provide information to the Ohio EPA that shows meeting WQS is not feasible due to such factors as background concentrations, flow conditions, hydrological modifications, physical conditions of the water body, human caused conditions that cannot be remedied or remediation would result in more environmental damage, and adverse economic and social impacts. The permittee is also required to demonstrate that the requested variance complies with all applicable antidegradation requirements of OAC rule 3745-1-05, and characterize the extent of any increased risk to human health and the environment. This information will be compared to what would be necessary to comply with WQS. When granted, variances apply only to the permittee requesting the variance, and only for the specific pollutant(s) requested. Variances last for five years, or the term of the permit, whichever is less.

Mercury variance {OAC 3745-33-07(D)(10)}

The general mercury variance affords the permittee an advantage over an individual variance. This is because the permittee does not have to demonstrate the widespread social and economic impact that would result from compliance with a WQBEL. The studies undertaken by the Foster Wheeler Corporation, DRI and McGraw Hill, and Ohio EPA have already satisfied this requirement. Therefore, the general mercury variance provides permittees with a streamlined application process.

Conditions of the variance are discussed below, and include an “initial” or variance limit, which replaces the average WQBEL, in addition to other permit requirements that strive to eliminate and minimize mercury where possible.

APPLICATION PROCEDURE

Decision to apply: The variance is available to NPDES permit holders that have, or will have, a 30-day average WQBEL for mercury and are unable to meet it {OAC 3745-33-07(D)(10)(a)}. If no 30-day average WQBEL for mercury exists in the permit or one is not proposed, the general mercury variance cannot be granted. A permittee may consider applying for an *individual* variance if it cannot meet its maximum WQBEL. Application for either an individual or a general mercury variance can be made at any time.

NPDES permittees that are currently able to achieve, or project that they will be able to achieve, an annual average mercury effluent concentration[4] (AAMEC) of 12 ng/l prior to the expiration of their respective NPDES permits, are eligible to apply {OAC 3745-33-07(D)(10)(a)}. If a permittee would not be able to project that it will achieve the 12 ng/l AAMEC by the expiration date of the permit, the permittee should apply for an individual variance, or, in the case of a

[4] The annual average mercury effluent concentration means the average of the most recent twelve months of effluent data.

short-term permit, request a compliance schedule to submit the variance application with the next renewal application.

A permit holder may not know immediately whether the limit can be met if its effluent data for mercury was not gathered using method 1631. It *is* necessary to have data using the new method to apply for the general mercury variance. As indicated below, a larger data set may result in a more desirable mercury variance limit. If the permittee has no data at the time it applies for a permit renewal, the Ohio EPA will send a letter, after receipt of application, requesting the data to use for the permit renewal.

Dischargers who did not have an existing NPDES permit as of June 22, 1999 are not eligible unless the discharge results from a clean-up activity (described in OAC 3745-33-07(D)(1)(i)), or if the discharge results from rerouting all or a portion of an existing permitted discharge to a new discharge point and there is a pollutant reduction in the discharge being rerouted.

Application contents: Once a permittee decides to apply, it should submit an application. This can be done either as an addendum to an NPDES permit renewal application, or with an NPDES permit modification request. An "Antidegradation Addendum" must also be completed. These forms are discussed in further detail below.

At this time Ohio EPA does not have a formal application form for seeking coverage under the general mercury variance. This guidance is intended, in part, to show what Ohio EPA would expect from a permittee in order to grant coverage under the general mercury variance. As stated above, the request should come with an NPDES permit modification request or renewal application. The items required by the rules are:

1. OAC 3745-33-07(D)(10)(a)(i): A certification that the permittee intends to be subject to the terms of the variance; the certification may be written as follows:

   "As an authorized representative for ----------, I am applying to the Director of Ohio EPA for coverage under the mercury variance from the 30-day average water quality-based mercury limit in the above-referenced NPDES permit. I hereby certify that I intend to be subject to the mercury variance terms and conditions of paragraph (D) (10) of rule 3745-33-07 under chapter 3745-33 of the Ohio Administrative Code. To the best of my knowledge, my NPDES-permitted discharge from outfall _____is currently able to achieve or I project it can achieve an annual average mercury effluent concentration of twelve ng/l prior to the expiration date of our renewed permit."

2. OAC 3745-33-07(D)(10)(a)(ii): A description of mercury reduction/elimination measures that have been undertaken as of the application date, if any; the permittee should explain in the application what measures it has already taken for mercury reduction, like information on sources of mercury, successful reduction strategies and case studies, and suggestions for or actual implementation of a program (may use existing information/literature if available).

3. OAC 3745-33-07(D)(10)(a)(iii): A Plan of Study (POS) which, at a minimum, must include the following:

   a. data on current influent and effluent mercury concentrations;
   b. preliminary identification of all known mercury sources;

c. description of current plans to reduce/eliminate known mercury sources;
d. preliminary identification of other potential sources;
e. a proposed schedule for evaluating sources; and
f. a proposed schedule for identifying and evaluating potential reduction, elimination, and prevention methods.

The POS is the most important section of the document and the following explanation is for guidance purposes.

The study will include the **complete plan** for mercury source identification and evaluation. Preliminary identification of mercury sources might entail using existing literature. Some common and unique mercury contributors are listed in Attachment 2. Also, if it is known, the level of mercury concentration in the intake compared to the effluent can help identify sources of mercury. Other contributions of mercury might be raw materials, treatment chemicals (not only at the facility but also at commercial or industrial users), individual plant process flows, storm water, groundwater infiltration, dental offices, human excretion (raw domestic wastewater may contain significant concentrations of mercury), atmospheric deposition, industrial discharges to a POTW, and hospitals. The type of industrial activity at a facility may indicate the possibility of mercury in its waste stream. For most industries, the chemical sampling database for existing pollutants in the different process streams can be found in the applicable USEPA Development Document.

After a preliminary identification of known sources, the identification of unknown but potential sources should start. A permittee might consider if there are in-place sources of mercury in sewers, storm drainage ditch sediments or in pipelines. To investigate, the permittee may plan on monitoring samples of sediments, flushed sewers and pipelines to help in locating particular sources. This plan could be proposed in the POS. The permittee could then use that data to possibly focus efforts on a smaller area, or repeat the monitoring. In the case of sewers where no sources are identified in the first round of sampling, the permittee could go to the next level of sewer size and do the process again. "Sources" may be defined geographically as sampling points in sewers if data show these locations have higher mercury concentrations.

The POS will include a proposed schedule for evaluating mercury sources, implementing the study and the pollutant minimization program (PMP, discussed in further detail below), and the date by which the permittee projects that it will be able to achieve the AAMEC mercury effluent concentration of 12 ng/l or the WQBEL (no more than five years from the permit effective date). The projection might be done using existing, legitimate data and/or literature, studies, reports, etc. that relate to the type of sources, system and treatment. The proposed plan should also evaluate potential ongoing pollution prevention and reduction measures to be implemented once compliance with the mercury variance permit conditions is achieved.

It is understood by Ohio EPA that for NPDES permittees who already have mercury effluent detection data and knowledge about the source of mercury in their discharges, it would be easy to submit a realistic time line for the POS. For NPDES permittees who may not have sufficient data, an approximate time line (however, not beyond the expiration date of the renewed permit) for the POS would be required. The "mercury variance " application would be considered incomplete unless a complete and acceptable schedule is included in the POS.

4. OAC 3745-33-07(D)(10)(a)(iv): Explanation of the basis for concluding that there are no readily available means to comply with the WQBEL without end-of-pipe controls for the particular discharge. At this point, most permittees will not have performed a detailed investigation of mercury sources. Therefore, the "explanation" can consist of a list of known or suspected significant sources (*i.e.,* intake water and raw materials) and an explanation of why the permittee believes that there are no measures, other than end-of-pipe controls, that are readily available and that will eliminate those sources.

5. OAC 3745-1-05: An Antidegradation Addendum. (See below.) This form is required with all NPDES renewal or modification applications.

VARIANCE ISSUANCE PROCESS

If Ohio EPA determines that the POS is acceptable, the variance is incorporated into the NPDES permit through renewal or a permit modification. If the permittee applies for the variance at the time of permit renewal, the variance will be issued simultaneously with the final permit. The variance lasts for five years or until the permit expiration date, whichever is shorter {OAC 3745-33-07(D)(2)}.

The permit will include the following:

1. An initial limit, which represents the level that is currently achievable, but no less stringent than the level achieved under the previous permit {OAC 3745-33-07(D)(6)(a)(i)}.

    a. The limit will be expressed as a monthly average, and will be calculated according to OAC 3745-2-04(D)(3) (average PEQ, or Projected Effluent Quality) using available Method 1631 effluent data. If the average PEQ is higher than the maximum limit, and the permittee has not applied for an individual variance from the maximum limit, then the average initial limit will be set equal to the maximum limit.
    b. If the PEQ-based variance limit is higher than the existing permit limit, Ohio's antidegradation rule at OAC 3745-1-05 applies. It is for this reason that the **Antidegradation** Addendum is required. Further guidance on the antidegradation rule is available from Ohio EPA. An "exclusion" to certain submittal and review requirements in the antidegradation rule is available at OAC 3745-1-05(F)(2)(d). The antidegradation rule applies even if compliance with a previous mercury limit was not achieved.

2. Conditions to achieve reasonable progress toward meeting WQS {OAC 3745-33-07(D)(6)(a)(ii)}. This provision will require a pollutant minimization program. Implementation of **pollutant minimization programs (PMPs)** increases the probability that a WQBEL will be achieved. PMP's are intended to be self-revising. That is, results and findings from the PMP can be used to address new areas of concern.

    An Ohio EPA Division of Surface Water permit guidance document, "Pollutant Minimization Programs" (Permit Guidance document number 7, August 13, 1998) is available on the Division's web site, and from the agency. It explains in detail how to develop and implement a PMP, what monitoring and sampling requirements will be included in the permit, and it provides some sample permit language. PMPs consist of three elements: 1) a control strategy for locating, identifying, and, where cost-effective, reducing the sources of the pollutant that contribute to discharge levels. A PMP is not necessarily pollution

prevention, but examining pollution prevention alternatives is encouraged by the rule. PMP strategies may include any cost-effective process for reducing pollutant levels, including pollution prevention, treatment, best management practices or other control mechanisms; 2) monitoring to track the progress of the PMP; and 3) an annual report of the results of the PMP.

3. A provision allowing the permit to be reopened and modified if the variance is revised {OAC 3745-33-07(D)(6)(a)(iv)}.

4. Monitoring and analysis requirements that are needed to assess impact of the variance, which may include testing of influents, effluents, fish tissue and sediment {OAC 3745-33-07(D)(6)(a)(v)}. These requirements will be developed by Ohio EPA on a case-by-case basis, with consideration given to current stream survey information and potential public participation.

5. A requirement to use the most sensitive EPA-approved analytical method for mercury {OAC 3745-33-07(D)(10)(c)(iv)}.

6. A requirement that the permittee must submit a certification after the actions identified in the POS and PMP have been completed {OAC 3745-33-07(D)(10)(c)(v)}. Certification is discussed later in this guidance.

7. Requirements that apply if the AAMEC exceeds 12 ng/l after Ohio EPA approval of the permittee's certification of completion of its POS and PMP tasks {OAC 3745-33-07(D)(10)(e)}. This will require the permittee to either submit an individual variance application or meet the WQBEL for mercury. Further details are below, under "Completion of Permit Requirements."

Note: A requirement to meet the WQBEL will NOT be included in the new permit, except as a condition that may apply if, after implementation of the POS and PMP, the AAMEC exceeds 12 ng/l and the permittee fails to apply for an individual variance.

Actions to be Taken During the Term of the Permit/Variance: Implementing measures defined in the POS {OAC 3745-33-07(D)(10)(c)(iii)}:

- The sources of mercury for the purchased materials used in the facility can be searched by examining the Right-to-Know or Material Safety Data Sheet or by asking the supplier to provide any additional information relating to the mercury content. The permittee will follow up with sampling of these known sources of mercury and see if this accounts for a significant portion of the plant influent mercury load.

- Preliminary sources can be removed from the POS in two ways. Obviously, when a pollutant is eliminated from a discharge through pollution minimization programs, that discharge is no longer a 'source', and the facility can report that as a success. A source can also be removed from the schedule if there is an extended period of non-detects of samples taken from the particular source. If the data indicates only occasional detections of the pollutant, the permittee can drop some sampling locations and add others to try and "close in" on a particular source or geographic area. Additionally, sources may be removed from study, and evaluated only during variance renewal, if the permittee would show that mercury could not feasiblely be reduced further (e.g. septage). Note: The

mercury POS is not intended to replace pretreatment program requirements, and does not take precedence over pretreatment program requirements or implementation.

The permittee is expected to fully implement the PMP. However, full implementation of a PMP may take more than one permit term. As long as the permittee is making "reasonable progress" in implementing the actions set forth in its PMP, it is in compliance with the PMP requirement.

During PMP implementation, if an investigated source has consistently low mercury levels or levels unable to feasiblely be reduced further, the permittee can cease periodic monitoring of that source under the PMP. The permittee will be required to monitor the source at some point to confirm that circumstances have not changed if the variance is renewed.

The permittee may find contributing sources that may *not* be significantly reduced, such as septage receiving facilities that accept only domestic septage. Although levels may be reduced through education or product changes, this source may be a continuous contributor of mercury levels. It may continue to be monitored, with continued implementation of the PMP.

Once the permittee identifies and quantifies significant sources and reduces its effluent levels as far as reasonably possible, its PMP actions will consist of monitoring significant sources and updating its control strategy as needed (e.g., if there are advances in feasible control technologies or if new sources are added).

Publicly-Owned Treatment Works (POTWs) can address indirect dischargers by following the same PMP steps for those dischargers as it follows for itself. If it has authority to do so, the POTW could require the indirect dischargers to take some of those steps. The POTW is not necessarily required to issue numeric limits for those dischargers. In some cases, best management practices (BMPs) may be appropriate instead of numeric limits. A POTW with an approved pretreatment program would need to submit a program modification request if it intends to revise the industrial user control documents to implement something other than current numerical limits. Ohio EPA has drafted a guidance on implementing BMPs in a pretreatment program. Guidance on specific mercury reduction/elimination actions can be found on U.S. EPA's web site and elsewhere. A list of some mercury reduction resources is included as Attachment 1[5].

COMPLETION OF PERMIT REQUIREMENTS

Certification of Compliance with General Mercury Variance: Upon completing the actions identified in the POS and PMP, the permittee will submit to Ohio EPA a certification that all of the permit conditions needed to implement the POS and PMP have been satisfied, but that compliance with the WQBEL has not been achieved. The certification should be accompanied by the following information:

1. all available influent and effluent mercury data;
2. data documenting all known significant sources, and steps that have been taken to reduce/eliminate those sources; and

[5]The list is not intended to represent endorsement by Ohio EPA and is provided for information purposes only.

3. a determination of the lowest mercury concentration that currently available data shows can be reliably achieved through implementation of the PMP (include a discussion for the value given). The certification should also include the average of the most recent twelve months of monthly effluent data.

Summary: Time line

Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Submit application for general mercury variance Initial limit 99th percentile or previous permit limit with PQL = 1.0 ug/l				Submit certification: 1) renew variance 2) apply for individual variance (initial variance limit/PQL in effect until OEPA acts on request) 3) meet WQBEL	Permit and variance expire.

Renewal of Permit/Variance: Within 180 days after receiving the certification, Ohio EPA will grant the variance renewal, issue a draft action proposing to approve the certification or, if necessary, a proposed modification of the permit {OAC 3745-33-07(D)(10)(d)}. If Ohio EPA does not act on the certification within 180 days, the existing variance will remain in effect.

If, after considering public comment, Ohio EPA approves the certification, the variance continues in effect in accordance with the terms of the permit. At that time, the "initial" variance limit will be replaced with a new limit that is based on the PEQ using last twelve monthly mercury concentrations that the permittee had provided in its certification, presuming that time period will be representative of operation and PMP implementation during the next variance term. The permittee will also be required to meet the AAMEC of 12 ng/l. As explained above, this may be done in a renewed permit or, if the approval occurs during the effective term of the permit, through a permit modification.

Certification that Permittee is Unable to Comply With General Mercury Variance Permit Conditions: If the information supplied with the certification indicates that the permittee has not met the mercury variance permit conditions, a renewal variance will NOT be granted. The permittee must apply for an individual variance (assuming one is needed). The initial mercury variance limit will remain in effect until Ohio EPA acts on the individual variance request. This action would be a proposed permit modification or a draft permit renewal, to delete the general mercury variance, approve the individual variance, and impose additional pollutant minimization steps. If the permittee does not submit an individual variance request, or does not qualify for an individual variance (based on the information submitted with the individual variance request), then the permit would be modified/renewed to contain a compliance schedule to meet the WQBEL.

CONDITIONS WITH RENEWAL VARIANCE

As noted above, the permit and variance will generally expire at the same time. The permittee will submit the request for variance renewal and the NPDES permit renewal application together. If the permittee is still eligible for the variance and submits the required elements of the variance application, Ohio EPA will approve the variance. The conditions of the renewed variance are somewhat different from the initial variance.

1. The permittee will have collected more influent and effluent data and other information before the renewal. As a result, the permittee's eligibility would no longer consider a projection of being able to achieve an AAMEC of 12 ng/l; if the permittee is not meeting that level by the time that the initial permit and variance expire, it is not eligible for the renewed general mercury variance (unless it fits within the "intake water" exception). The permittee will be required to maintain the AAMEC of 12 ng/l.

2. The permittee will have made some progress in implementing its PMP. Some previously suspected sources may have been ruled out. As a result, continued work under the PMP may be limited to monitoring significant sources, continuing implementation of existing PMP measures, and conducting periodic reviews to determine whether significant facility changes or process/wastewater control developments require revisions to the PMP. Conditions will be permit-specific.

3. After Ohio EPA approves the certification, if the AAMEC ever exceeds 12 ng/l, the permittee will be required to notify Ohio EPA within thirty (30) days after the exceedence. The permittee will have six (6) months to take one of two actions: 1) submit an individual variance application; or 2) request a permit modification for a compliance schedule to meet the WQBEL. Extensions will be considered on a case-by-case basis. If the permittee applies for an individual variance or a compliance schedule in a timely manner, the general mercury variance will apply until the date that Ohio EPA acts on the individual variance application or the date that the compliance schedule becomes effective. If the permittee does *not* apply for an individual variance or compliance schedule in a timely manner, the WQBEL will apply. This will occur under a provision in Part II of the permit, which will specify that the WQBEL will take effect ONLY in the event that the permittee fails to apply for individual relief after exceeding the 12 ng/l AAMEC. The exception to this is that a permittee with an AAMEC above 12 ng/l may continue under the general mercury variance if it demonstrates that the AAMEC exceeds 12 ng/l due primarily to the presence of mercury in the permittee's intake water. Exceedences due primarily to mercury in the intake water are demonstrated by showing that the majority of mercury in the discharge clearly comes from the intake. A significant data set (comprised of at least twenty intake/effluent samples) should be collected. The Ohio EPA expects that intake sampling will be done as part of the POS/PMP sampling if the permittee believes that the intake could be a source of mercury.

   For industrial dischargers, the intake is whatever the facility's source water is. However, a permittee may be required to examine the feasibility of alternative water sources, especially where: 1) the discharge is not to the same body of water; and 2) the receiving water is meeting the water quality standard upstream of the discharge. Also, if the facility has significant non-wastewater sources of mercury, such as air sources, that may influence intake levels, the Ohio EPA may require that data be collected for an additional reference site to establish background levels of mercury.

   For POTWs the intake is considered to be the finished drinking water supply for users of

the POTW. If there are several drinking water supplies within the POTW sewershed, the POTW would need to establish a flow-weighted intake concentration, based on mercury data from drinking water supplies, and reasonable accurate approximations of the flow contribution from each (for example, population served by a water supplier as a percentage of population served by the POTW considered with the domestic wastewater flow).

Exceedences due primarily to mercury in the intake water are demonstrated by showing that the majority of the mercury in the discharge clearly comes from the intake. A significant data set (comprised at least 20 intake/effluent samples) should be collected. If the facility has significant non-wastewater sources of mercury, such as air sources, that may influence the intake levels, the Ohio EPA may require that data be collected for an additional reference site to establish background levels of mercury. Also, a permittee may be required to examine the feasibility of alternative water sources. This would be especially important in cases where: 1) the discharge is not to the same body of water that the intake is taken from, and 2) the receiving water is meeting the water quality standard upstream of the discharge. The Ohio EPA expects that intake sampling will be done as part of the POS/PMP sampling if the permittee believes that the intake could be a source of mercury in the effluent.

If the permittee can show that the discharge exceeds the AAMEC of 12 ng/l primarily as a result of intake waters, the permit would not contain a requirement to meet an AAMEC, and would instead contain only a 30-day limit that the permittee was currently able to achieve. This determination can be made at one of several points in the variance process, but it is expected to occur most often at the time of PMP certification, or at some later time if PMP efforts reduce mercury sources to the point where intake loadings become the primary source. At either time, the AAMEC requirement would be removed from the permit by modification. Monitoring of intake water(s) will be required to track the continued applicability of this provision.

PERMIT RENEWALS WHEN NO VARIANCE HAS BEEN REQUESTED

If an NPDES permittee does not request a general mercury variance, or does not submit the required certification, the permit will be renewed with a compliance schedule to meet the WQBEL. During the compliance schedule (interim period) the permittee should either submit construction plans (as necessary) to meet the WQBEL, or reapply for a general mercury variance.

EXAMPLES

The following are theoretical examples of permittees that receive a permit with a mercury limit, under various situations.

Permittee A receives a renewed NPDES permit with a limit of 10 ng/l for mercury. The permittee cannot meet this limit now without costly end-of-pipe controls but determines that they can currently, or before the expiration date of the permit projects they will be able to, meet an AAMEC of 12 ng/l. The permittee can apply for a general mercury variance.

Permittee B receives a renewed NPDES permit with a limit of 15 ng/l for mercury that is based on either human health or wildlife criteria. Again, the permittee cannot meet this limit without costly end of pipe controls, but projects that they will be able to meet an AAMEC of 12 ng/l

before the expiration date of the permit. The permittee may apply for a general mercury variance.

Permittee C receives a renewed permit that has either a limit less than 12 ng/l, or greater than 12 ng/l based on human health or wildlife criteria, and determines that they cannot meet these limits without costly end of pipe controls. Additionally, the permittee does not project that it could meet an annual average limit of 12 ng/l before the expiration date of the permit. If mercury levels in intake water are not the primary source of noncompliance with the mercury limit, they are not eligible for a general mercury variance, but may apply for an individual variance.

FREQUENTLY ASKED QUESTIONS

Q - What is the significance of 12 ng/l?

A - Ohio EPA's human health criterion for mercury was 12 ng/l statewide, prior to adoption of the Great Lakes Initiative rules in 1997. Those rules added wildlife criteria for the Lake Erie basin, resulting in more stringent average limits. Currently, the Ohio River basin average criterion for mercury is still 12 ng/l. Ohio EPA looked at concentrations in effluent and background in streams. Establishing a cutoff of 12 ng/l would not require a vast majority of NPDES permittees with a limit equal to or less than 12 ng/l to undergo an antidegradation review.

Q - Will the variance always be granted?

A - No. A permittee that applies for a general mercury variance is required to develop both a POS and PMP. If both of these are implemented, and the twelve most recent months of mercury sampling results indicate that the average WQBEL was not met, the Ohio EPA will review both the POS and PMP to ensure that they were correctly implemented. If it is found that the POS and PMP were implemented but the permittee cannot meet an AAMEC of 12ng/l consistently, the permittee would consider an individual variance. If a review of the individual variance application excludes them from coverage, the permittee will be required to meet the average WQBEL.

Q - What should I do if I don't have a mercury limit? Am I going to be required to use the new method? What about a pretreatment local limit?

A - If a permit contains mercury monitoring only, with no limit, then the new analytical method must be used. The need for a permit limit will be evaluated at a later date, by comparing a statistical evaluation of the effluent data with the preliminary WQBEL.

Q - Where can I get my samples analyzed under the new method, and how much does it cost?

A - Attachment 3 contains a list of laboratories currently providing contract analytical services using EPA method 1631 for mercury. The list in no way represents endorsement by Ohio EPA, but rather is included for information purposes only. The number of laboratories providing such services is expected to grow.

FOR MORE INFORMATION CONTACT:

Ohio EPA, Division of Surface Water
Public Permit Unit Supervisor
P.O. Box 1049
Columbus, OH 43216-1049
(614) 644-2001

ATTACHMENT 1
Known Resources for Mercury Reduction/Elimination

Web sites

www.epa.gov/p2/
www.epa.ohio.gov/opp/
www.epa.gov/glnpo/bns/
www.epa.gov/grtlakes/

Documents

Wisconsin Strategy for Regulating Mercury in Wastewater
Wisconsin Department of Natural Resources - May 1996
PO Box 7921 Madison, WI 53707-7921
(608) 266-2621

Blueprint for Mercury Reduction
Western Lake Superior Sanitary District (WLSSD) - March 1997
2626 Courtland Street, Duluth MN 55806-1894
(218) 722-3336

Mercury Waste Pollution Prevention
United States Environmental Protection Agency Region 5
77 W. Jackson Blvd., Chicago IL 60604
(312) 353-2000 or (800) 621-8431

Mercury in Medical Waste
United States Environmental Protection Agency Region 5
77 W. Jackson Blvd., Chicago IL 60604
(312) 353-2000 or (800) 621-8431

Mercury Pollution Prevention in Michigan
Michigan Mercury Pollution Prevention Task Force - April 1996
PO Box 30028, Lansing MI 48909-7528

Report on the Mercury Contamination Reduction Initiative
Minnesota Pollution Control Agency - March 1999
520 Lafayette Rd, St. Paul MN 55155
(612) 296-6300

Mercury: In your Community and the Environment
Wisconsin Department of Natural Resources
PO Box 7921 Madison, WI 53707-7921
(608) 266-2621

Strategies for Mercury Control in Minnesota

Minnesota Pollution Control Agency
Mercury Task Force
520 Lafayette Rd, St. Paul MN 55155
(612) 296-6300

A Guide for Dentists "How to manage waste from your dental practice"

Western Lake Superior Sanitary District (WLSSD) - March 1997
2626 Courtland Street, Duluth MN 55806-1894
(218) 722-3336 Hotline (218) 722-0761

The Case Against Mercury: Rx for Pollution Prevention

Terrene Institute / USEPA Region 5 - 1995
1717 K Street, NW
Suite 801, Washington, DC 20006
(202) 833-8317

Ohio Dental Association Bulk Mercury Collection Project

Contact: Bill Narotski
Ohio EPA Office of Pollution Prevention
Lazarus Government Center
PO Box 1049, Columbus OH 43216-1049
(614) 644-3469

or *Ohio Dental Association*
Contact: Chris Moore
1370 Dublin Rd, Columbus OH 43215
(614) 486-2700
(800)282-1526

ATTACHMENT 2
Documented Sources of Mercury

The following is a list of mercury contributors that are common to many communities. The list should be helpful for developing a mercury reduction and elimination program.

Common mercury contributors

Hospitals	Breakage of mercury containing equipment, laboratory reagents, mercuric oxide batteries.
Concentrations:	**0.3** ppb - **5.4** ppb *
Dentists	Dental amalgam. (Some of this mercury may be transformed into bioavailable form during wastewater treatment. Majority will concentrate in sludge.)
Concentrations:	**0.1** - **0.3** grams/dentist/day *
Sewer Cleaning	Mercury collects in sewer line sediments. Sewer cleaning flushes sediments to the wastewater treatment plant.
Residential Wastewater	Mercury ingested deposited in human waste.
Concentrations:	**0.1** ppb average *
Septic Haulers	
Concentrations:	**62** ppb average. For sanitary sewer district approximately 1.6 % of influent mercury was calculated to be from septage. *

Unique mercury contributors

Contributors that may be specific to a particular community.

Industrial laundries	Chemicals used in cleaning process such as bleach and caustic soda, dirt cleaned from clothing. Imported clothing may contain mercury in dyes and preservatives.
Concentrations:	**0.7** ppb *
Laboratories	Mercury containing equipment and reagents.
Concentrations:	**5** ppb *
Veterinary clinics	Mercury containing devices and reagents.
Printing Industry	Inks and special paper coatings.

Pottery and Arts Mercury contained in pigments in art materials.

Concentrations: **0.31** ppb. Individual glazes had concentrations up to **41** ppb. *

Automobile Service Mercury in oil and dirt.

Painting / Paint stripping The use of mercury in latex paint has been banned since 1990. Latex paint manufactured prior to that date could contain mercury. Stripping of old paint from houses may result in introduction of mercury into sewers. Storage of old paint.

Concentrations: **250** - **125,000** ppb in old latex paint. (**pre 1990**)*

Scrap Dealers Vehicles and domestic appliances containing mercury such as gauges and light fixtures.

Landfill leachate Leachate will vary greatly dependent upon the type of waste at the landfill.

Concentrations: Municipal solid waste facility **0.7 - 2.0** ppb. *

Pollution control devices Wet scrubbers at industrial facilities where there is no pre-treatment for the scrubber water before being discharged to the sewer.

Concentrations: **200** ppb prior to treatment, **20** ppb after treatment. *

* *All data provided here was obtained from a literature review and investigations conducted by the Western Lake Superior Sanitary District (WLSSD), and is intended to provide an example of the potential mercury levels that may be found in wastewater.*

ATTACHMENT 3
Laboratories Providing Contract Analytical Services
Using EPA Method 1631 for Mercury (3-21-00)

This list is based on information obtained by Ohio EPA Division of Surface Water staff beginning in September 1999. It does not represent a quote for analytical services. The laboratories are identified for informational purposes only. This may not be an exhaustive list and it does not constitute an endorsement by Ohio EPA.

AEP Environmental Laboratory
4001 Bixby Road
Groveport OH 43125
Contact: Ralph Evick
Phone: (614) 836-4215
email: rlevick@aep.com

- Cost/sample $55
- Turnaround 28 days
- MDL 0.16 ng/l
- Charge for sample bottles if not returned
- Training available for Method 1669 clean sampling techniques

Battelle/Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim WA 98382
Contact: Brenda Lasorsa
Phone: (360) 681-3650
email: brenda.lasorsa@pnl.gov

- Cost/sample $75, assuming batches of 15 or more samples
- Turnaround 8 days for analysis + 10 days for reporting
- MDL 0.2 ng/l
- Additional charge of $15 for Teflon sample bottle if they provide them (highly recommended)

Brooks Rand Ltd.
3950 Sixth Ave. NW
Seattle WA 98107
Contact: Rebecca Wood
Phone: (206) 632-6206
email: rebecca@brooksrand.com
Web page: www.brooksrand.com

- Cost/sample $55, for standard turnaround and deliverable
- Turnaround 30 business days, standard. Expedited turnaround at additional cost
- MDL 0.2 ng/l

Chesapeake Biological Laboratory
1 Williams St.
P.O. Box 38
Solomons MD 20688
Contact: Robert Mason
Phone: (410) 326-7387
email: mason@cbl.umces.edu
Web page: www.cbl.umces.edu/mason-n.html

- Cost/sample $75, for total mercury in water samples
- Turnaround One month, typical
- MDL 0.1 ng/l for a variety of water matrices

Frontier Geosciences
414 Pontius North
Seattle WA 98109
Contacts: Nicholas Bloom, Eric Vondergeest
Phone: (206) 622-6960
Web page: www.frontiergeosciences.com

- Cost/sample $50
- Turnaround 28 days
- MDL 0.6 ng/l
- Additional charge for sample containers for small orders
- Have recommended procedure that allows use of 24 hr composite samples

Ginosko Laboratory Inc
17875 Cherokee St.
Harpster OH 43323-9302
Contact: Bill Pfeiffer
Phone: (740) 496-4571

- Cost/sample $90
- Turnaround 5 - 7 business days
- MDL 3 ng/l currently; moving into new clean room around mid-November and expect lower MDL

Jones & Henry Laboratories, Inc.
2000 West Central Ave.
Toledo OH 43606-3973
Contact: Dave Collins
Phone: (419) 666-0411

- Cost/sample $80, includes sampling kit
- Turnaround 2 weeks
- MDL 0.2 - 0.5 ng/l

Skidaway Institute of Oceanography
10 Ocean Science Circle
Savannah GA 31411
Contact: Herb Windom
Phone: (912) 598-2490
email: herb@skio.peachnet.edu

- Cost/sample $50, small batches. Possibly as low as $25/sample if large number of samples submitted (by a "WWTP co-op")
- Turnaround 28 days
- MDL < 1 ng/l
- Can provide advice in sampling techniques

Summit Environmental Technologies, Inc.
595 East Tallmadge Avenue
Akron OH 44310
Contact: Mo Osman
Phone: (330) 253-8211
email: set3746@apk.net

- Cost/sample NA
- Turnaround 1 - 2 weeks
- MDL 0.1 ng/l
- Provide Method 1669 clean sampling services